

Amendments to the Abstract:

Please insert the following paragraph as the abstract of the application being filed concurrently herewith.

ABSTRACT OF THE DISCLOSURE

Provided are low-temperature formation methods of a perfectly oriented ZnO nanorod array and a new-type ZnO nanowall array having a new crystal growth rate, morphology, and orientation, from ZnO nanoparticles coated on a substrate. The method of forming the ZnO nanorod array includes synthesizing ZnO nanoparticles, coating on a substrate the ZnO nanoparticles serving both as a buffer layer and a seed layer, and growing the ZnO nanoparticles into crystals in a nutrient solution containing Zn nitrate, Zn acetate, or a derivative thereof, and hexamethylenetetramine. The method of forming the ZnO nanowall array includes synthesizing ZnO nanoparticles, coating on a substrate the ZnO nanoparticles serving both as a buffer layer and a seed layer, and growing the ZnO nanoparticles into crystals in a nutrient solution containing Zn acetate or its derivative and sodium citrate.